CLAIMS

1. Modular plant growing apparatus comprising:

a housing including inner and outer walls, opposed side walls, a bottom wall, and a top wall interconnected to form an enclosure;

a liquid nutrient solution reservoir formed, at least partially by the bottom wall and the inner and outer walls in the enclosure;

at least one of the inner and outer walls including plant supporting structure with plant receiving openings extending from external to the enclosure to internal to the enclosure; and

a pump in liquid communication with the reservoir and a manifold and distribution conduits in liquid communication with the pump and constructed and positioned to supply liquid nutrient solution from the reservoir to at least roots of plants positioned in the plant supporting structure.

2. Modular plant growing apparatus as claimed in claim 1 wherein the plant supporting structure includes a plurality of

horizontally extending, vertically separated corrugations formed in the inner wall.

3. Modular plant growing apparatus as claimed in claim 1 wherein the plant supporting structure includes a plurality of horizontally extending, vertically separated corrugations formed in the inner wall, each corrugation including a lower surface with a plurality of horizontally spaced apart plant receiving openings.

4. Modular plant growing apparatus as claimed in claim 1 wherein the plant supporting structure includes a plurality of horizontally extending, vertically separated corrugations formed in the inner wall and in the outer wall.

5. Modular plant growing apparatus as claimed in claim 1 wherein the outer wall includes a clear access window.

6. Modular plant growing apparatus as claimed in claim 1 wherein the bottom wall includes downwardly extending feet and the top wall includes mating openings for receiving feet of a vertically adjacent module for vertical stacking.

7. Modular plant growing apparatus as claimed in claim 1 wherein one of the opposed side walls includes outwardly extending coupling protrusions and another of the opposed side walls includes mating openings for receiving coupling protrusions of a horizontally adjacent module for horizontal stacking.

8. Modular plant growing apparatus as claimed in claim 1 wherein the inner and outer walls and the bottom and top walls are horizontally straight to form a straight sided module.

9. Modular plant growing apparatus as claimed in claim 1 wherein the inner and outer walls and the bottom and top walls are horizontally arcuate to form an arcuate corner module.

10. Modular plant growing apparatus as claimed in claim 9 wherein a plurality of arcuate corner modules are stacked horizontally and vertically to form a substantially circular configuration.

11. Modular plant growing apparatus as claimed in claim 8 including modules with the inner and outer walls and the bottom

and top walls formed horizontally arcuate to define arcuate corner modules and wherein a plurality of straight sided modules and a plurality of arcuate corner modules are stacked horizontally and vertically to form a substantially elliptical configuration.

12. Modular plant growing apparatus as claimed in claim 1 wherein the pump is positioned within the enclosure.

13. Modular plant growing apparatus comprising:

a housing including inner and outer walls, opposed side walls, a bottom wall, and a top wall interconnected to form an enclosure;

a liquid nutrient solution reservoir formed, by lower portions of the bottom wall, the opposed side walls, and the inner and outer walls in the enclosure;

at least one of the inner and outer walls defining plant supporting structure including a plurality of horizontally extending, vertically separated corrugations formed in the inner wall, each corrugation including a lower surface with a plurality of horizontally spaced apart plant receiving openings extending from external to the enclosure to internal to the enclosure; and

a pump positioned in the enclosure in liquid communication with the reservoir and a manifold and interconnected distribution conduits in liquid communication with the pump, the distribution conduits including a plurality of spray nozzles associated with the plant receiving openings within the enclosure and constructed and positioned to supply liquid nutrient solution from the reservoir to at least roots of plants positioned in the plant receiving openings.

14. Modular plant growing apparatus as claimed in claim 13 wherein the outer wall includes a clear access window.

15. Modular plant growing apparatus as claimed in claim 13 wherein the bottom wall includes downwardly extending feet and the top wall includes mating openings for receiving feet of a vertically adjacent module for vertical stacking.

16. Modular plant growing apparatus as claimed in claim 15 wherein one of the opposed side walls includes outwardly extending coupling protrusions and another of the opposed side walls includes mating openings for receiving coupling protrusions of a horizontally adjacent module for horizontal stacking.

17. Modular plant growing apparatus as claimed in claim 16 wherein the inner and outer walls and the bottom and top walls are horizontally straight to form a straight sided module.

18. Modular plant growing apparatus as claimed in claim 17 including modules with the inner and outer walls and the

bottom and top walls formed horizontally arcuate to define arcuate corner modules and wherein a plurality of straight sided modules and a plurality of arcuate corner modules are stacked horizontally and vertically to form a substantially elliptical configuration.

19. Modular plant growing apparatus as claimed in claim 16 including modules with the inner and outer walls and the bottom and top walls formed horizontally arcuate to define arcuate corner modules and a plurality of arcuate corner modules are stacked horizontally and vertically to form a substantially circular configuration.

20. Modular plant growing apparatus comprising:

a housing including inner and outer walls, opposed side walls, a bottom wall, and a top wall interconnected to form an enclosure;

a liquid nutrient solution reservoir formed, by lower portions of the bottom wall, the opposed side walls, and the inner and outer walls in the enclosure;

at least one of the inner and outer walls defining plant supporting structure including a plurality of horizontally extending, vertically separated corrugations formed in the inner wall, each corrugation including a lower surface with a plurality of horizontally spaced apart plant receiving openings extending from external to the enclosure to internal to the enclosure, an upper surface integral with the lower surface to form a corrugation and to complete the enclosure, and the upper and lower surfaces defining an angle substantially ninety degrees therebetween; and

a pump positioned in the enclosure in liquid communication with the reservoir and a manifold and interconnected distribution conduits in liquid communication with the pump, the distribution conduits including a plurality of spray nozzles associated with the plant receiving openings within the

enclosure and constructed and positioned to supply liquid nutrient solution from the reservoir to at least roots of plants positioned in the plant supporting structure.